



**[4910-13]**

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 25**

**[Docket No. FAA-2012-0699; Notice No. 25-12-02-SC]**

**Special Conditions:** Airbus, Model A318-112 Airplane (S/N 3238); Certification of Cooktops.

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed special conditions.

**SUMMARY:** This action proposes special conditions for the Airbus Model A318-112 airplane.

This airplane as modified by Fokker Services B.V. will have a novel or unusual design feature associated with a cooktop installation. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** Send your comments on or before **[Insert date 45 days after publication in Federal Register]**.

**ADDRESSES:** Send comments identified by docket number FAA-2012-0699 using any of the following methods:

- Federal eRegulations Portal: Go to <http://www.regulations.gov/> and follow the online instructions for sending your comments electronically.

- Mail: Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, D.C., 20590-0001.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, D.C., between 8 a.m. and 5 p.m., Monday through Friday, except federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov/>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, D.C., between 9 a.m. and 5 p.m., Monday through Friday, except federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Dan Jacquet, FAA, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601

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## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive on or before the closing date for comments.

We may change these special conditions based on the comments we receive.

### **Background**

On January 12, 2010, Fokker Services B.V. applied for a supplemental type certificate for an interior conversion on an Airbus Model A318-112 airplane, serial number 3238. The Airbus Model A318-112 airplane is a large, transport-category airplane powered by two CFM56-5B9/P engines, with a basic maximum takeoff weight of 130,071 pounds.

Fokker Services B.V. is requesting certification to convert this Airbus Model A318-112 to a corporate jet, operating for both public and private use (not for hire, not for common carriage). For private use the aircraft will be certified for a maximum of 8 crew and 23 passengers, and the public use occupancy will be a maximum of 8 crew and 19 passengers. The aircraft will be subdivided into an entrance way, executive lounge, two private lounges, and a private bathroom. The entry will include the installation of two wet galleys. One of the galleys will include the installation of two combined cooktop pan units. The addition of a cooktop to this interior conversion can lead to hazards to both occupants and the aircraft. Special consideration is needed to address the safety standards associated with this installation.

## **Type Certification Basis**

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.101 Fokker Services B.V. must show that the Airbus Model A318-112 airplane, as changed, continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A28NM or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis." The regulations incorporated by reference in A28NM are 14 CFR part 25, as amended by Amendments 25-1 through 25-56, with reversions to earlier amendments, voluntary compliance to later amendments, special conditions, equivalent safety findings, and exemptions listed in the type certificate data sheet.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Airbus Model A318-112 airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Airbus Model A318-112 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.101.

### **Novel or Unusual Design Features**

The Airbus Model A318-112 airplane, serial number 3238, will incorporate the following novel or unusual design feature: cooktops in the passenger cabin. Cooktops introduce high heat, smoke, and the possibility of fire into the passenger cabin environment. The current airworthiness standards of part 25 do not contain adequate or appropriate safety standards to protect the airplane and its occupants from these potential hazards. The applicant's proposed system is considered to be a novel or unusual design feature.

### **Discussion**

Currently, ovens are the prevailing means of heating food on airplanes. Ovens are characterized by an enclosure that contains both the heat source and the food being heated. The hazards presented by ovens are thus inherently limited and are well understood through years of service experience. Cooktops, on the other hand, are characterized by exposed heat sources and the presence of relatively unrestrained hot cookware and heated food. These may represent unprecedented hazards to both occupants and the airplane.

Cooktops could have serious passenger and aircraft safety implications if appropriate requirements are not established for their installation and use. The requirements identified in these proposed special conditions are in addition to those considerations identified in Advisory Circular (AC) 20-168, Certification Guidance for Installation of Non-Essential, Non-Required Aircraft Cabin Systems and Equipment (CS&E), and those in AC 25-17A, Transport Airplane

Cabin Interiors Crashworthiness Handbook. The intent of these proposed special conditions is to provide a level of safety that is consistent with that on similar aircraft without cooktops.

In similar cooktop installations, the FAA has required a deployable cover and a means to automatically shut off the power when the cover was in use. In lieu of these requirements, the cooktop installation in this Airbus A318-112 will have a lid and a timer that is not covered by the lid. The timer switches the heating elements on and off, has a maximum time of 20 minutes, and is still accessible when the lid is closed. The cabin crew will be instructed on its use. In addition to the lid and timer, the applicant will supply a fire blanket that is 1,100 by 1,100 mm (catalogue no. SAP-967-T). The fire blanket meets the requirements of British Standard BS 6575:1965. These specifications contain the requirements for flexibility, heat, electrical resistance, and fire extinguishing including cooking oil fires for light duty and heavy duty (industrial) applications.

For this cooktop installation, the FAA requires evidence that with the cooktop lid closed, the temperature set on “high,” and the timer at maximum, the cooktop will maintain safe operation and will not create a hazardous condition even with cooking oil in the cooktop.

### **Applicability**

As discussed above, these special conditions are applicable to the Airbus Model A318-112. Should Fokker Services B.V. apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A28NM to incorporate the same novel or unusual design feature, the special conditions would apply to that model as well.

## **Conclusion**

This action affects only certain novel or unusual design features on one model of airplane. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

## **List of Subjects in 14 CFR Part 25**

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

## **The Proposed Special Conditions**

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for the Airbus Model A318-112 airplane, serial number 3238, modified by Fokker Services B.V.

Cooktop installations with electrically powered burners must comply with the following criteria:

1. Means, such as conspicuous burner-on indicators, physical barriers, or handholds, must be installed to minimize the potential for inadvertent personnel contact with hot surfaces of both the cooktop and cookware. Conditions of turbulence must be considered.
2. Sufficient design means must be included to restrain cookware while in place on the cooktop, as well as representative contents, e.g., soup, sauces, etc., from the effects of flight loads and turbulence. Restraints must be provided to preclude hazardous movement of cookware and contents. These restraints must accommodate any cookware that is identified for use with the cooktop. Restraints must be designed to be easily utilized and effective in service. The



cookware restraint system should also be designed so that it will not be easily disabled, thus rendering it unusable. Placarding must be installed which prohibits the use of cookware that cannot be accommodated by the restraint system.

3. Placarding must be installed that prohibits the use of cooktops (i.e., power on any burner) during taxi, takeoff, and landing.

4. Means must be provided to address the possibility of a fire occurring on or in the immediate vicinity of the cooktop. Two acceptable means of complying with this requirement are as follows:

a. Placarding must be installed that prohibits any burner from being powered when the cooktop is unattended, which would prohibit a single person from cooking on the cooktop and intermittently serving food to passengers while any burner is powered; a fire detector must be installed in the vicinity of the cooktop that provides an audible warning in the passenger cabin; and a fire extinguisher of appropriate size and extinguishing agent must be installed in the immediate vicinity of the cooktop. Access to the extinguisher must not be blocked by a fire on or around the cooktop. One of the fire extinguishers required by § 25.851 may be used to satisfy this requirement. If this is not possible, then the extinguisher in the galley area would be additional; or,

b. An automatic, thermally activated, fire-suppression system must be installed to extinguish a fire at the cooktop and immediately adjacent surfaces. The agent used in the system must be an approved, total-flooding agent suitable for use in an occupied area. The fire-suppression system must have a manual override. The automatic activation of the fire-suppression system must also automatically shut off power to the cooktop.

5. The surfaces of the galley surrounding the cooktop, which would be exposed to a fire on the cooktop surface or in cookware on the cooktop, must be constructed of materials that comply with the flammability requirements of 14 CFR part 25, appendix F, part III. This requirement is in addition to the flammability requirements typically required of the materials in these galley surfaces. During the selection of these materials, consideration must also be given to ensure that the flammability characteristics of the materials will not be adversely affected by the use of cleaning agents and utensils used to remove cooking stains.
6. The cooktop ventilation system ducting must be protected by a flame arrestor. In addition, procedures and time intervals must be established and included in the instructions for continued airworthiness to inspect and clean or replace the ventilation system to prevent a fire hazard from the accumulation of flammable oils. [Note: The applicant may find additional useful information in the Society of Automotive Engineers, Aerospace Recommended Practice 85, Rev. E, entitled, "Air Conditioning Systems for Subsonic Airplanes," dated August 1, 1991.]
7. Means must be provided to contain spilled foods or fluids in a manner that prevents the creation of a slipping hazard to occupants, and that will not lead to the loss of structural strength due to corrosion.
8. Cooktop installations must provide adequate space for the user to immediately escape a hazardous cooktop condition.
9. A means to shut off power to the cooktop must be provided at the galley containing the cooktop and in the cockpit. If additional switches are introduced in the cockpit, revisions to smoke or fire emergency procedures of the airplane flight manual (AFM) will be required.

10. Cooktop installations must incorporate a timer that will switch the heating elements off after a maximum time of 20 minutes.

11. Instructions for the cabin crew to ensure safe operation of the cooktop lid and timer must be provided.

12. Evidence must be provided that with the cooktop lid closed, the temperature set on "high," and the timer at maximum, the cooktop will maintain safe operation and will not create a hazardous condition even with cooking oil in the cooktop.

Issued in Renton, Washington, on August 22, 2012.

Ali Bahrami  
Manager, Transport Airplane Directorate  
Aircraft Certification Service

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